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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,995	07/11/2003	Ilan Calderon	1311OBT-US	2778

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EXAMINER
NGUYEN, HUONG Q

ART UNIT	PAPER NUMBER
3736	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>		
	10/616,995		CALDERON ET AL.		
	<b>Examiner</b>		<b>Art Unit</b>		
		Helen Nguyen	3736		

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 07 November 2003.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-7 is/are rejected.

7) ☒ Claim(s) 6 is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All    b) ☐ Some \*    c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____
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## DETAILED ACTION

### *Information Disclosure Statement*

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### *Claim Objections*

2. Claim 6 is objected to because it refers back to the incorrect claim. Claim 6 seeks to further limit the disclosed CTG monitor introduced in Claim 5. However, Claim 6 states dependency back to Claim 1, which does not mention said CTG monitor. Therefore, Claim 6 should refer back to Claim 5, not Claim 1. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable by Garfield et al (US Pat No. 6816744) in view of Krausman et al (US Pat No. 6095991). Garfield et al disclose an electromyogram (EMG) system operative to sense electromyographic activity generated in muscle (Figure 8). However, Garfield et al do not disclose a position sensor. Krausman et al disclose at least one position sensor used to detect three-dimensional position and

orientation information (Figure 3A and 3B), one application of which is to integrate the sensor with other monitoring instruments, such as heart rate monitors (presently claimed) or other medical monitors, to gain a better understanding of the physiological function being measured (Col8, line 22-27). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a position sensor as disclosed by Krausman et al in conjunction with the EMG system as disclosed by Garfield et al, because the position sensor is compatible with medical monitors such as EMG systems and will allow better monitoring of electromyographic activity.

5. Garfield et al also disclose a processor (22), referred to as "computer," in communication with said EMG system, operative to process data of said EMG system. Krausman et al further teach a position sensor, as stated above, to obtain three-dimensional position and orientation information from said at least one position sensor. Furthermore, Garfield et al disclose three-dimensional mesh plots (Col.4, line 22-23) and three-dimensional vector tracings (Col.29, line 25-26) as possible outputs of the data, all of which convey positional and orientational information. Such outputs combined with the data obtained from the position sensor disclosed by Krausman et al will thus provide myographic information as a function of position and orientation. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the processor as disclosed by Garfield et al to process data of said EMG system in conjunction with three-dimensional position and orientation information obtained from at least one position sensor, as disclosed by Krausman et al, to provide an output that comprises electromyographic activity as a function of position.

6. In regards to Claim 2, Garfield et al disclose an EMG system comprising of at least one EMG sensor (201-204) and at least one reference EMG sensor (205) adapted to sense

electromyographic activity generated in a muscle of interest and in a reference muscle, respectively (Col.23, line 20-22). In regards to Claim 3, Garfield et al disclose a monitor (23) coupled to the processor to display the processed information from the processor.

7. In regards to Claim 5, Garfield et al disclose a fetal cardiac unit (403) and tocodynamometer (401) as standard clinical devices useable in conjunction with the invention (Figure 7). Such standard devices inherently comprise of sensors used to obtain the necessary data. Thus, the fetal heart rate (FHR) sensor and TOCO sensor disclosed by Garfield et al may be referred to collectively as a CTG monitor. These sensors are connected to the EMG system, which in turn, are connected to the previously mentioned processor.

8. In regards to Claim 6, the collective CTG system comprising of fetal heart rate and TOCO sensors are connected to said processor. Garfield et al disclose sensors (17), such as those for fetal heart rate and TOCO of the collective CTG monitor, connected to the processor or "computer" (22) in Figure 1. Krausman et al also disclose a "microprocessor" (Figure 2 or Col.4, line 24-29) to output analyzed positional data. Thus, when used in conjunction with one another, the processor of Garfield et al is operative to process data from the collective CTG monitor along with data from said EMG system and at least one position sensor, as disclosed by Krausman et al, to provide electromyographic activity and CTG data as a function of the three-dimensional position.

9. In regards to Claim 7, Garfield et al disclose a warning mechanism in communication with the processor, operative to issue a warning if the processed data processed by said processor is above a predefined limit, or other abnormalities, are found (Col.16, line 26-28).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garfield et al in view of Krausman et al, further in view of Triano (US Pat No. 5991701). Krausman et al

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disclose a position sensing system but do not disclose measuring the three-dimensional position and orientation of said position sensor with respect to a reference position. Triano discloses an invention comprising of positional sensors (S1 and S2) to determine the corresponding three-dimensional positions (Col.3, line 19-20) as the sensors move, one in reference to the other (Col.3, line 2-3, 14-17). To measure three-dimensional position, namely in accordance with a coordinate system, a reference position must be present to accurately capture such data. This is disclosed in reference by Triano to US Pat. No 3868565 (Col.1, line 46-48). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to place position sensors in Garfield et al, as modified by Krausman et al, relative to each other, as taught by Triano, to accurately display position information as it is well known in the art that any sort of measurement of distance requires a reference point upon which measurements must be based, particularly for three-dimensional coordinate data.

11. Claims 1-7 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Garfield et al in view of Ishikawa et al (US Pat No. 6261247 B1). Garfield et al disclose an electromyogram (EMG) system operative to sense electromyographic activity generated in muscle (Figure 8) as stated in the above rejection. However, Garfield et al do not disclose a position sensor. Ishikawa et al disclose at least one position sensor used to detect three-dimensional position and orientation information (Figure 3A and 3B), one application of which is to monitor conditions specific to pregnant women, such as pelvic size and cervical dilation (Col.1, line 51-66). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate position sensors as disclosed by Ishikawa et al into the EMG system as disclosed by Garfield et al to further enhance the diagnostic device of Garfield et al.



12. As stated before, Garfield et al disclose three-dimensional mesh plots (Col.4, line 22-23) and three-dimensional vector tracings (Col.29, line 25-26) as possible outputs of the data, all of which convey positional and orientational information. Such outputs combined with the data obtained from the position sensor disclosed by Ishikawa et al will provide the desired myographic information as a function of position and orientation. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the processor as disclosed by Garfield et al to process data of said EMG system in conjunction with three-dimensional position and orientation information obtained from at least one position sensor, as disclosed by Ishikawa et al, to provide an output that comprises electromyographic activity as a function of position.

13. In regards to Claim 4, Ishikawa et al disclose a position sensing system adapted to measure the three-dimensional position and orientation (Col.22, line 6-7) of at least one position sensor with respect to a reference position, which Ishikawa describes as determining the distance (D) between the two transponders or sensors (Col5, line4 or Figure 1).

14. In regards to Claim 6, the collective CTG system comprising of fetal heart rate and TOCO sensors are connected to said processor. Garfield et al disclose sensors (17), such as those for fetal heart rate and TOCO of the collective CTG monitor, connected to the processor or “computer” (22) in Figure 1. Ishikawa et al also disclose a “CPU” (112) to output analyzed positional data. Thus, when used in conjunction with one another, processor of Garfield et al is operative to process data from the collective CTG monitor along with data from said EMG system and at least one position sensor as disclosed by Ishikawa et al to provide electromyographic activity and CTG data as a function of the three-dimensional position.

***Conclusion***

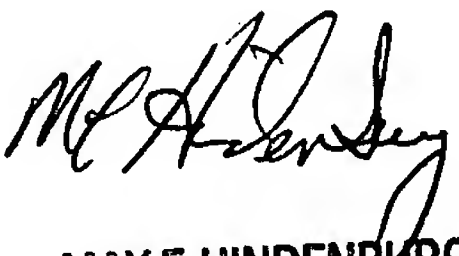
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harrison et al (US Pat No. 5373852) and Rosenberg (US Pat No. 5301680) both disclose apparatuses for monitoring uterine contractions. Fuchs (US Pat No. 5747996) discloses a spatial position sensor system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Nguyen whose telephone number is 571-272-8340. The examiner can normally be reached on Monday - Friday, 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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